```
=> d his ful

     (FILE 'HOME' ENTERED AT 17:54:47 ON 21 FEB 2006)

     FILE 'HCAPLUS' ENTERED AT 18:15:16 ON 21 FEB 2006
               E ARAI TOMONORI/AU
L17           10 SEA ABB=ON  "ARAI TOMONORI"/AU
L18            3 SEA ABB=ON  L17 AND ?ISOPROPENYL?
                 SELECT RN L18 1-3

     FILE 'REGISTRY' ENTERED AT 18:16:24 ON 21 FEB 2006
L19           14 SEA ABB=ON  (675605-81-9/BI OR 108788-33-6/BI OR 149-73-5/BI
                 OR 1617-31-8/BI OR 28465-09-0/BI OR 28465-10-3/BI OR 39863-91-7
                 /BI OR 675605-82-0/BI OR 675605-83-1/BI OR 675605-84-2/BI OR
                 690242-72-9/BI OR 74036-20-7/BI OR 763-32-6/BI OR 7785-70-8/BI)

     FILE 'HCAPLUS' ENTERED AT 18:16:29 ON 21 FEB 2006
L20            3 SEA ABB=ON  L18 AND L19

     FILE 'REGISTRY' ENTERED AT 18:18:16 ON 21 FEB 2006
L21            1 SEA ABB=ON  675605-81-9/RN

     FILE 'HCAPLUS' ENTERED AT 18:18:31 ON 21 FEB 2006
L22            2 SEA ABB=ON  L21   2 cits from CA Plus

     FILE 'MEDLINE, BIOSIS, EMBASE, JAPIO, JICST-EPLUS' ENTERED AT 18:18:43 ON
     21 FEB 2006
L23            0 SEA ABB=ON  L22   0 cits from 5 databases

     FILE 'USPATFULL' ENTERED AT 18:18:54 ON 21 FEB 2006
L24            0 SEA ABB=ON  L21   0 cits from USPatFull


     FILE HOME

     FILE HCAPLUS

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     FILE COVERS 1907 - 21 Feb 2006  VOL 144 ISS 9
     FILE LAST UPDATED: 20 Feb 2006  (20060220/ED)

     New CAS Information Use Policies, enter HELP USAGETERMS for details.

      This file contains CAS Registry Numbers for easy and accurate
      substance identification.

     FILE REGISTRY
     Property values tagged with IC are from the ZIC/VINITI data file
     provided by InfoChem.

     STRUCTURE FILE UPDATES:   20 FEB 2006  HIGHEST RN 874742-76-4
```

DICTIONARY FILE UPDATES: 20 FEB 2006 HIGHEST RN 874742-76-4

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH January 6, 2006

Please note that search-term pricing does apply when conducting SmartSELECT searches.

****
* *
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
* *
****

Structure search iteration limits have been increased. See HELP SLIMITS for details.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

FILE MEDLINE
FILE LAST UPDATED: 21 FEB 2006 (20060221/UP). FILE COVERS 1950 TO DATE.

On December 11, 2005, the 2006 MeSH terms were loaded.

The MEDLINE reload for 2006 will soon be available. For details on the 2005 reload, enter HELP RLOAD at an arrow promt (=>). See also:

http://www.nlm.nih.gov/mesh/
http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html
http://www.nlm.nih.gov/pubs/techbull/nd05/nd05_med_data_changes.html
http://www.nlm.nih.gov/pubs/techbull/nd05/nd05_2006_MeSH.html

OLDMEDLINE is covered back to 1950.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2006 vocabulary.

This file contains CAS Registry Numbers for easy and accurate

FILE BIOSIS
FILE COVERS 1969 TO DATE.
CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 15 February 2006 (20060215/ED)

FILE EMBASE
FILE COVERS 1974 TO 20 Feb 2006 (20060220/ED)

EMBASE has been reloaded. Enter HELP RLOAD for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE JAPIO
FILE COVERS APR 1973 TO OCTOBER 27, 2005

>>> GRAPHIC IMAGES AVAILABLE <<<

>>> NEW IPC8 DATA AND FUNCTIONALITY NOT YET AVAILABLE IN THIS FILE. USE IPC7 FORMAT FOR SEARCHING THE IPC. WATCH THIS SPACE FOR FURTHER DEVELOPMENTS AND SEE OUR NEWS SECTION FOR FURTHER INFORMATION ABOUT THE IPC REFORM <<<

FILE JICST-EPLUS
FILE COVERS 1985 TO 20 FEB 2006 (20060220/ED)

THE JICST-EPLUS FILE HAS BEEN RELOADED TO REFLECT THE 1999 CONTROLLED TERM (/CT) THESAURUS RELOAD.

FILE USPATFULL
FILE COVERS 1971 TO PATENT PUBLICATION DATE: 21 Feb 2006 (20060221/PD)
FILE LAST UPDATED: 21 Feb 2006 (20060221/ED)
HIGHEST GRANTED PATENT NUMBER: US7003800
HIGHEST APPLICATION PUBLICATION NUMBER: US2006037120
CA INDEXING IS CURRENT THROUGH 21 Feb 2006 (20060221/UPCA)
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 21 Feb 2006 (20060221/PD)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Dec 2005
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Dec 2005

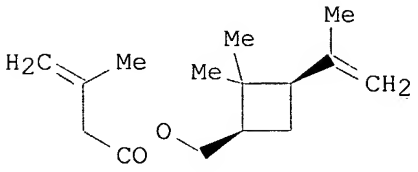
```
=> d que stat l22
L21           1 SEA FILE=REGISTRY ABB=ON  675605-81-9/RN
L22           2 SEA FILE=HCAPLUS ABB=ON  L21

=> d ibib abs hitstr l22 1-2
```

L22 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER:	2004:38941 HCAPLUS
DOCUMENT NUMBER:	140:287191
TITLE:	Synthesis of the sex pheromone of the citrus mealybug, Pseudococcus cryptus
AUTHOR(S):	Nakahata, Takashi; Itagaki, Noriaki; Arai, Tomonori; Sugie, Hajime; Kuwahara, Shigefumi
CORPORATE SOURCE:	Laboratory of Applied Bioorganic Chemistry, Division of Life Science, Graduate School of Agricultural Science, Tohoku University, Sendai, 981-8555, Japan
SOURCE:	Bioscience, Biotechnology, and Biochemistry (2003), 67(12), 2627-2631 CODEN: BBBIEJ; ISSN: 0916-8451
PUBLISHER:	Japan Society for Bioscience, Biotechnology, and Agrochemistry
DOCUMENT TYPE:	Journal
LANGUAGE:	English
OTHER SOURCE(S):	CASREACT 140:287191

GI



I

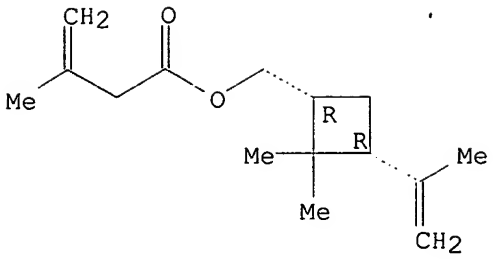
AB The sex pheromone of the citrus mealybug (Pseudococcus cryptus), [(1R,3R)-3-isopropenyl-2,2-dimethylcyclobutyl]methyl 3-methyl-3-butenoate (I), was synthesized from (+)-α-pinene in five operational steps in a 43% overall yield. The synthetic pheromone was identical with the natural pheromone in 1H-NMR and mass spectroscopic properties, and showed almost the same pheromonal activity as the natural pheromone.

IT **675605-81-9P**, (1R,3R)-3-Isopropenyl-2,2-dimethylcyclobutyl]methyl 3-methyl-3-butenoate
RL: BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(asym. synthesis of the cyclobutane ester sex pheromone of the citrus mealybug, Pseudococcus cryptus)

RN 675605-81-9 HCAPLUS

CN 3-Butenoic acid, 3-methyl-, [(1R,3R)-2,2-dimethyl-3-(1-methylethenyl)cyclobutyl]methyl ester (9CI) (CA INDEX NAME)

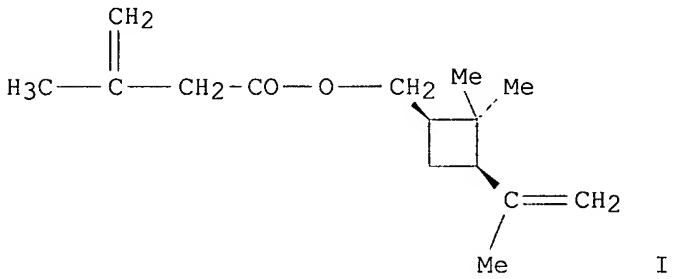
Absolute stereochemistry. Rotation (+).



REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:833082 HCAPLUS
DOCUMENT NUMBER: 141:36321
TITLE: Identification of a sex pheromone component of Pseudococcus cryptus
AUTHOR(S): Arai, Tomonori; Sugie, Hajime; Hiradate, Syuntaro; Kuwahara, Shigefumi; Itagaki, Noriaki; Nakahata, Takashi
CORPORATE SOURCE: Department of Citrus Research, National Institute of Fruit Tree Science, Kuchinotsu, Nagasaki, 859-2501, Japan
SOURCE: Journal of Chemical Ecology (2003), 29(10), 2213-2223
CODEN: JCECD8; ISSN: 0098-0331
PUBLISHER: Kluwer Academic/Plenum Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

AB A sex pheromone component of P. cryptus was isolated and identified. The crude pheromone extract obtained by airborne collection was fractionated by liquid chromatog. on Florisil, and further purified by HPLC and preparative gas chromatog. (GC). The pheromone component was shown to be an ester, the alc. part of which was identical to the known alc. moiety of the pheromone of Planococcus citri. The chemical structure was determined to be 3-isopropenyl-2,2-dimethylcyclobutylmethyl 3-methyl-3-butenoate (I) by MS and 1H NMR analyses. The absolute configuration of the pheromone was assigned as (1R,3R) by comparison of the retention time of the alc. derived from the P. cryptus pheromone with those of the alc. derived from P. citri pheromone, and a synthetic sample of alc. enriched in the (1R,3R)-enantiomer, using a chiral GC stationary phase. The structure of the pheromone was confirmed by synthesis and by bioassays in a glass

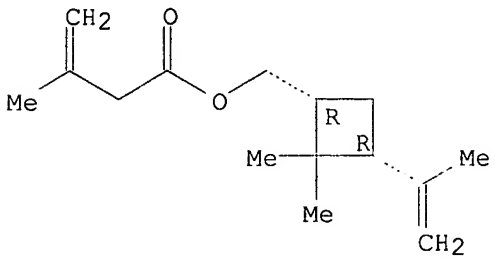
house.

IT **675605-81-9P**
RL: BSU (Biological study, unclassified); NPO (Natural product occurrence); PRP (Properties); PUR (Purification or recovery); SPN (Synthetic preparation); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation)
(sex pheromone component of Pseudococcus cryptus)

RN 675605-81-9 HCAPLUS

CN 3-Butenoic acid, 3-methyl-, [(1R,3R)-2,2-dimethyl-3-(1-methylethenyl)cyclobutyl]methyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

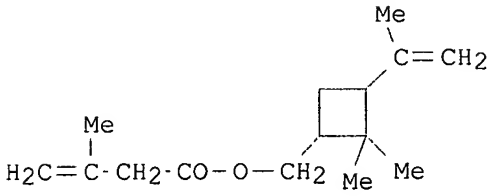
Inventor Search

=> d ibib abs hitstr l20 1-3

L20 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:428887 HCAPLUS
DOCUMENT NUMBER: 140:401774
TITLE: Novel ester compound as attractant of Pseudococcus cryptus
INVENTOR(S): **Arai, Tomonori**
PATENT ASSIGNEE(S): Incorporated Administrative Agency, National Agriculture and Bio-Oriented Research Organization, Japan
SOURCE: PCT Int. Appl., 21 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004043896	A1	20040527	WO 2003-JP14303	20031111
W: IL, US				
JP 2004161654	A2	20040610	JP 2002-328482	20021112
PRIORITY APPLN. INFO.:			JP 2002-328482 A	20021112

GI

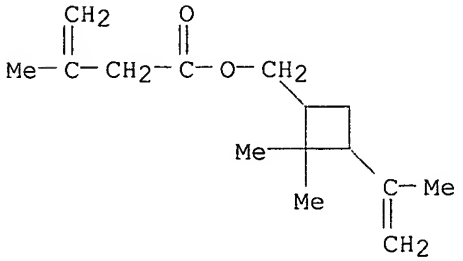


I

AB A novel ester compound is 3-**isopropenyl**-2,2-dimethylcyclobutylmethyl 3-methyl-3-butenoate, and used as a sexual attractant. The compound is represented by the following formula (I).

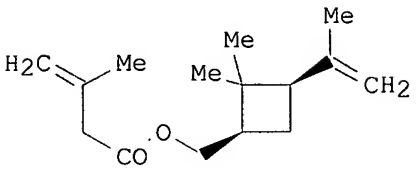
IT **690242-72-9**
RL: AGR (Agricultural use); BCP (Biochemical process); BIOL (Biological study); PROC (Process); USES (Uses)
(as attractant of Pseudococcus cryptus)

RN 690242-72-9 HCAPLUS
CN 3-Butenoic acid, 3-methyl-, [2,2-dimethyl-3-(1-methylethenyl)cyclobutyl]methyl ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:38941 HCAPLUS
DOCUMENT NUMBER: 140:287191
TITLE: Synthesis of the sex pheromone of the citrus mealybug, Pseudococcus cryptus
AUTHOR(S): Nakahata, Takashi; Itagaki, Noriaki; **Arai, Tomonori**; Sugie, Hajime; Kuwahara, Shigefumi
CORPORATE SOURCE: Laboratory of Applied Bioorganic Chemistry, Division of Life Science, Graduate School of Agricultural Science, Tohoku University, Sendai, 981-8555, Japan
SOURCE: Bioscience, Biotechnology, and Biochemistry (2003), 67(12), 2627-2631
CODEN: BBBIEJ; ISSN: 0916-8451
PUBLISHER: Japan Society for Bioscience, Biotechnology, and Agrochemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 140:287191
GI



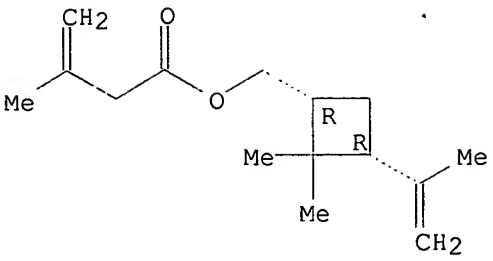
I

AB The sex pheromone of the citrus mealybug (Pseudococcus cryptus), [(1R,3R)-3-**isopropenyl**-2,2-dimethylcyclobutyl]methyl 3-methyl-3-butenoate (I), was synthesized from (+)-α-pinene in five operational steps in a 43% overall yield. The synthetic pheromone was identical with the natural pheromone in 1H-NMR and mass spectroscopic properties, and showed almost the same pheromonal activity as the natural pheromone.

IT **675605-81-9P**, (1R,3R)-3-**Isopropenyl**-2,2-dimethylcyclobutyl]methyl 3-methyl-3-butenoate
RL: BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(asym. synthesis of the cyclobutane ester sex pheromone of the citrus mealybug, Pseudococcus cryptus)

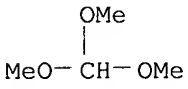
RN 675605-81-9 HCAPLUS
CN 3-Butenoic acid, 3-methyl-, [(1R,3R)-2,2-dimethyl-3-(1-methylethenyl)cyclobutyl]methyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

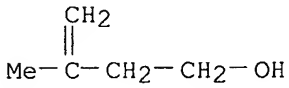


IT **149-73-5**, Trimethyl orthoformate **763-32-6**, 3-Methyl-3-buten-1-ol **7785-70-8**, (+)-α-Pinene **675605-83-1 675605-84-2**
RL: RCT (Reactant); RACT (Reactant or reagent)
(asym. synthesis of the cyclobutane ester sex pheromone of the citrus mealybug, Pseudococcus cryptus)

RN 149-73-5 HCAPLUS
CN Methane, trimethoxy- (9CI) (CA INDEX NAME)

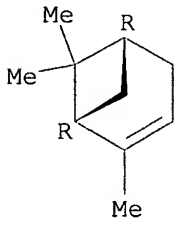


RN 763-32-6 HCAPLUS
CN 3-Buten-1-ol, 3-methyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



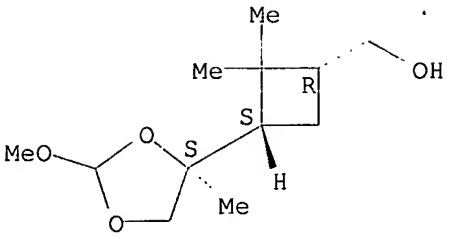
RN 7785-70-8 HCAPLUS
CN Bicyclo[3.1.1]hept-2-ene, 2,6,6-trimethyl-, (1R,5R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



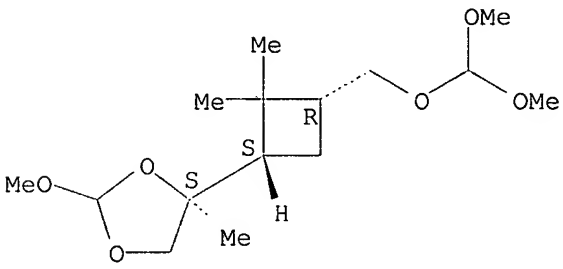
RN 675605-83-1 HCAPLUS
CN Cyclobutanemethanol, 3-[(4S)-2-methoxy-4-methyl-1,3-dioxolan-4-yl]-2,2-dimethyl-, (1R,3S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

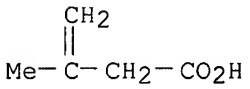


RN 675605-84-2 HCAPLUS
CN 1,3-Dioxolane, 4-[(1S,3R)-3-[(dimethoxymethoxy)methyl]-2,2-dimethylcyclobutyl]-2-methoxy-4-methyl-, (4S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

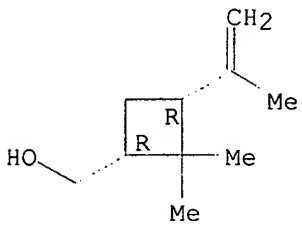


IT **1617-31-8P**, 3-Methyl-3-butenoic acid **28465-09-0P**
39863-91-7P 74036-20-7P 675605-82-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(asym. synthesis of the cyclobutane ester sex pheromone of the citrus mealybug, Pseudococcus cryptus)
RN 1617-31-8 HCAPLUS
CN 3-Butenoic acid, 3-methyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 28465-09-0 HCAPLUS
CN Cyclobutanemethanol, 2,2-dimethyl-3-(1-methylethenyl)-, (1R,3R)- (9CI) (CA INDEX NAME)

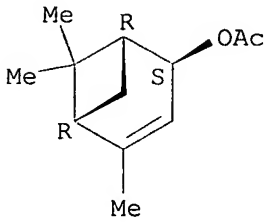
Absolute stereochemistry. Rotation (+).



RN 39863-91-7 HCAPLUS

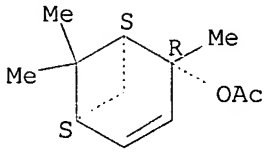
CN Bicyclo[3.1.1]hept-3-en-2-ol, 4,6,6-trimethyl-, acetate, (1R,2S,5R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



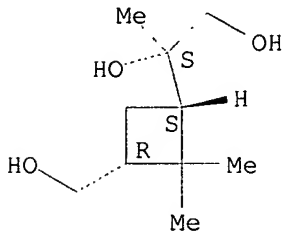
RN 74036-20-7 HCAPLUS
CN Bicyclo[3.1.1]hept-3-en-2-ol, 2,6,6-trimethyl-, acetate, (1S,2R,5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



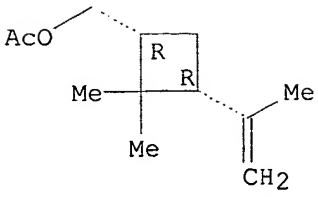
RN 675605-82-0 HCAPLUS
CN 1,3-Cyclobutanedimethanol, α-(hydroxymethyl)-α,2,2-trimethyl-, (αS,1S,3R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



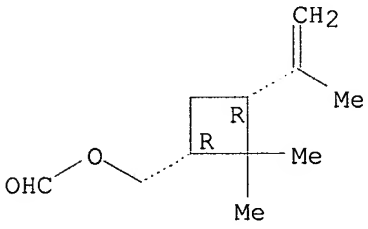
IT **28465-10-3P 108788-33-6P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(asym. synthesis of the cyclobutane ester sex pheromone of the citrus mealybug, Pseudococcus cryptus)
RN 28465-10-3 HCAPLUS
CN Cyclobutanemethanol, 2,2-dimethyl-3-(1-methylethenyl)-, acetate, (1R,3R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



RN 108788-33-6 HCAPLUS
CN Cyclobutanemethanol, 2,2-dimethyl-3-(1-methylethenyl)-, formate, (1R,3R)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:833082 HCAPLUS
DOCUMENT NUMBER: 141:36321
TITLE: Identification of a sex pheromone component of Pseudococcus cryptus
AUTHOR(S): **Arai, Tomonori**; Sugie, Hajime; Hiradate, Syuntaro; Kuwahara, Shigefumi; Itagaki, Noriaki; Nakahata, Takashi
CORPORATE SOURCE: Department of Citrus Research, National Institute of Fruit Tree Science, Kuchinotsu, Nagasaki, 859-2501, Japan
SOURCE: Journal of Chemical Ecology (2003), 29(10), 2213-2223
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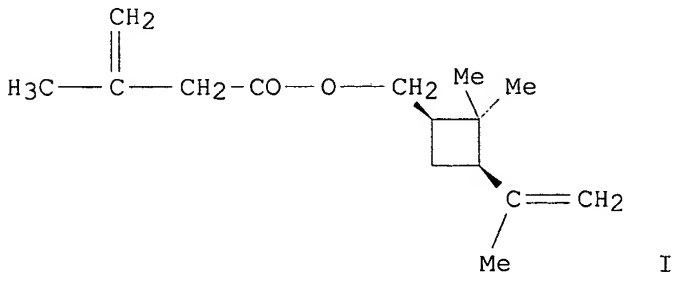


I

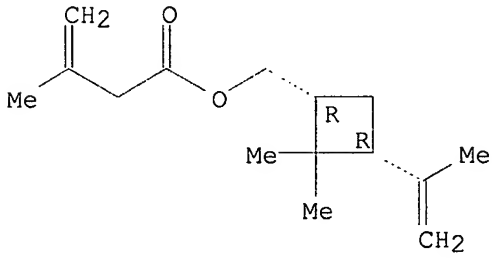
AB A sex pheromone component of P. cryptus was isolated and identified. The crude pheromone extract obtained by airborne collection was fractionated by liquid chromatog. on Florisil, and further purified by HPLC and preparative gas chromatog. (GC). The pheromone component was shown to be an ester, the alc. part of which was identical to the known alc. moiety of the pheromone of Planococcus citri. The chemical structure was determined to be 3-**isopropenyl**-2,2-dimethylcyclobutylmethyl 3-methyl-3-butenoate (I) by MS and 1H NMR analyses. The absolute configuration of the pheromone was assigned as (1R,3R) by comparison of the retention time of the alc. derived from the P. cryptus pheromone with those of the alc. derived from P. citri pheromone, and a synthetic sample of alc. enriched in the (1R,3R)-enantiomer, using a chiral GC stationary phase. The structure of the pheromone was confirmed by synthesis and by bioassays in a glass house.

IT **675605-81-9P**
RL: BSU (Biological study, unclassified); NPO (Natural product occurrence); PRP (Properties); PUR (Purification or recovery); SPN (Synthetic preparation); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation)
(sex pheromone component of Pseudococcus cryptus)

RN 675605-81-9 HCAPLUS

CN 3-Butenoic acid, 3-methyl-, [(1R,3R)-2,2-dimethyl-3-(1-methylethenyl)cyclobutyl]methyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



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